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Part 1

1.—Description of a New Freshwater Fish of the Family Theraponidae  
from Western Australia

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A new species of freshwater *Therapon* from Millstream Station, West Pilbara, Western Australia, is described, and notes are given on some other freshwater fishes occurring in the same region, the fish fauna of which was hitherto very imperfectly known. Moreover *Mesopristes jenkinsi* from the Ord River is shown to be synonymous with *Therapon alligatoris*, and the range of the latter is extended to include the Kimberley Division of Western Australia.

When Whitley (1947) published his survey of the fresh-water fauna of Australia, he could list only three species of fishes from the mid-west and north-west of Western Australia (his Greyian Fluvifaunula), and correctly stated that ichthyologically the area could: "... be considered unexplored ...". The three species listed by Whitley were *Therapon unicolor*, *Hypseleotris compressus*, and the eyeless Eleotrid *Milyeringa veritas* which is restricted to subterranean waters near the tip of the North West Cape Peninsula and therefore cannot be regarded as characteristic of the area as a whole.† Shipway (1950, 1953) has since recorded *Eleotris aurea* from the Murchison River and a Melanotaeniid which he identified as *Melanotaenia nigrans*, from the Bullawarrina River, West Pilbara, but the situation has remained essentially unaltered.

When therefore, in July and August 1958, staff members of the Western Australian Museum visited West Pilbara for collecting purposes special attention was devoted to the fish fauna of the region. A popular account of the visit was given by Ride (1959), and there is a map of the area in Mees (1961). Fishes were collected by Miss K. C. A. Vollprecht (now Mrs. Thies) and the author. Eight species were obtained and I am convinced that, with the exception of an eel, presumably *Anguilla bicolor*, which was reported by locals but not seen by us, they give a fairly complete picture of the fish fauna of the Fortescue River and its tributaries in the area where we worked (about 70 miles inland). The fishes obtained belong to the following families: Ariidae (one species), Plotosidae (one species), Melanotaeniidae (one species), Dorosomidae (one species), Gobiidae (one species), and Theraponidae (three species).

A complete report on this collection had been planned, but the systematics of several groups of Australian freshwater fishes are in such disorder that they can only be solved by major revisions. Fortunately two families, the Melanotaeniidae and the Dorosomidae are now under review by Mr. I. S. R. Munro (C.S.I.R.O. Fisheries and Oceanography, Cronulla), who has received all our material of these groups on loan. Until he has completed his work it is of little use to comment on members of these groups. While the main purpose of this paper is the description of a new *Therapon*, it seems nevertheless useful to give some information on the other species collected.

Though catfishes have been known to occur in the Fortescue River since its discovery, have been eaten by explorers (F. T. Gregory in Gregory and Gregory 1884, p. 62-63), and have been mentioned by later authors like Ride (1959), and Ride and Serventy (1961), their specific identity had never been ascertained. I found these fishes to be *Arius australis*, a species that in Western Australia had previously been recorded from Noonkanbah, Kimberley Division (Rendahl 1921), though Munro (1957) did not include Western Australia in its range. This is apparently the common catfish of the State: the Western Australian Museum has recent material from Langey Crossing, Fitzroy River, west Kimberley Division, collected on 24.VI.1960 by F. W. Monck, P 5090, and from the King Edward River, Kalumburu, north Kimberley Division, collected on 27.VI.1960 by A. M. Douglas and G. F. Mees, P 5091. The goby is *Glossogobius giuris*. The Plotosid and the Dorosomid are as yet unidentified. Of the Theraponidae one is the widely distributed *Therapon unicolor* which occurs over the whole northern part of Australia, in Western Australia at least as far south as the Murchison River. Watson (1958), followed by Ride and Serventy (1961), recorded *Therapon unicolor* from the Greenough River south of Geraldton, but at the suggestion of Messrs. J. O. Knight and B. J. Parkes, who could find only *T. caudavittatus* in the Greenough River, I examined

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† *Craterocephalus cuneiceps* from the Murchison River, though not mentioned by Whitley, may also be included: it occurs not only in the upper branches of the river, but was found in its lower course by Shipway (1950); see also Whitley (1955).

Watson's specimens, which were donated to the Western Australian Museum, and found them referable to the latter species.

The second *Therapon* is *T. percoides* and the Melanotaeniid is doubtless identical with the one that in literature has been called *Melanotaenia nigrans* (Whitley 1948, Shipway 1953, Ride and Serventy 1961) or *M. australis* (Whitley 1960). It may be recalled that de Castelnau (1875) described *Neoatherina australis* and *Therapon fasciatus* from Swan River. While the record of *Neoatherina* (= *Melanotaenia*) has generally been accepted as erroneous, the Swan River, meaning south-western Australia, is at present still included in the range of *Therapon percoides* (of which *T. fasciatus* has been considered a synonym) on the basis of de Castelnau's specimen (Ogilby and McCulloch 1916, Rendahl 1922, Whitley 1948, Nichols 1949, Whitley 1960). I even believe that de Castelnau's record is the sole basis for the inclusion of the species in the fauna of Western Australia. While it is true that the name Swan River, or Swan River Colony, used to be applied to an ill-defined but large area of which Perth was the centre, it would hardly have included any part of the ranges of *Melanotaenia* and *Therapon percoides*, as I do not believe that either of these species occurs far south of the Tropic of Capricorn. In the introduction to his paper, de Castelnau states that the collector of his material from Western Australia, the Reverend G. J. Bostock, who lived at Fremantle, also provided specimens from the Dampier Archipelago, and it is likely that the types of *Neoatherina australis* and *Therapon fasciatus* were actually obtained somewhere on the mainland opposite the Dampier Archipelago. The Kimberley Division, as was only to be expected, can be included in the range of *T. percoides*, as in June 1960, I found it in several tributaries of the King Edward River near Kalumburu.

The third *Therapon* apparently represents an undescribed species that may be characterized as follows:

#### *Therapon aheneus* species nova (Fig. 1)

Description. D (XI)-XII-(XIII).  $(8\frac{1}{2})-9\frac{1}{2}$ , A III.8 $\frac{1}{2}$ , P 13-14 (ii.10.i or ii.10.ii), V I.5, C 19-20 (ignoring some very short undivided rays on each side; usually ii.15.ii), gillrakers on outer branchial arch 6-8+1+11-12, branchiostegals 6, scales in lateral line 40-44, scales under lateral line 38-44 in a longitudinal series. Differs from all other species of the genus by the combination of fin formula, gillrakers, and scale numbers.

A very normal representative of the genus; body moderately deep. Head 2.7 to 3.0 in standard length, about equal to depth of body or slightly less; profile of snout and forehead slightly concave, becoming convex behind eye; eye large, 3.8 to 4.0 in head; snout of about same length as eye diameter or a little longer, maxillary reaching to below anterior border of eye;\* nostrils well separated, anterior one just above upper lip, with an elevated rim that might pass for a very short tube; posterior one in front of middle of eye, in the anterior part of a narrow longitudinal groove with an elevated rim; mouth moderate; each jaw has an outer series of fairly small teeth, followed by a narrow band of very fine teeth; no teeth on palatine or tongue; no canines; posterior border of preoperculum free, finely serrated; operculum with a flat spine that does not normally protrude beyond the border of the soft operculum; branchiostegals six; suprascapular bone exposed.

Lateral line slightly arched, following the profile of the back, becoming straight on the caudal peduncle, and continued to the basis of the tail.

Body scaled, with the exception of the upper surface of snout and head, and chin; scales largest on the sides on the middle of the body.

Dorsal fin normally with twelve strong spines, increasing in length from the 1st to the 5th; the 2nd twice the length of the 1st; the 5th

\* In specimens fixed with open mouth, these proportions are distorted.

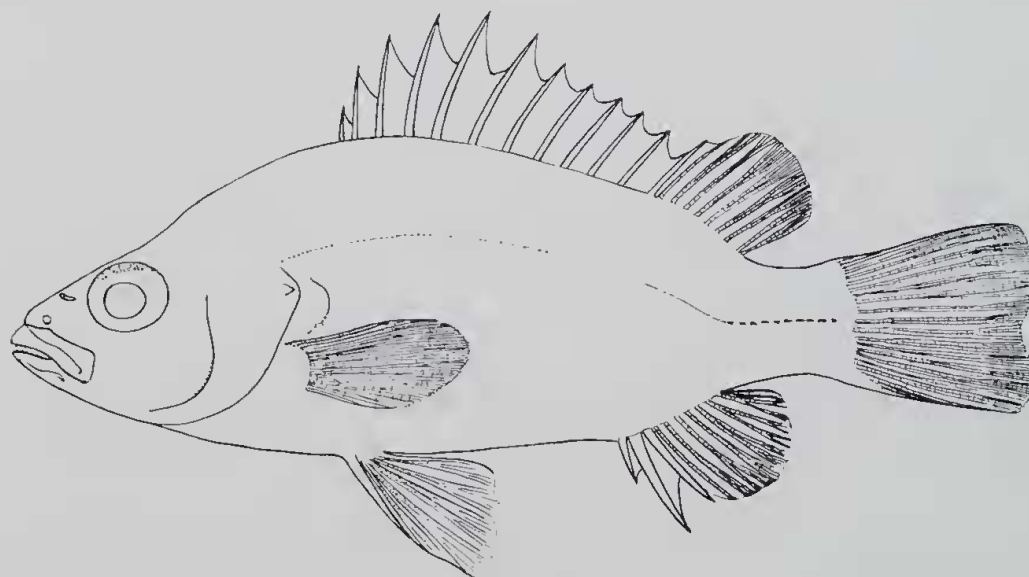


Fig. 1.—Outline drawing of *Therapon aheneus*, type, nat. size.



longest. 1.6 to 2.0 times eye diameter; from there onwards each following spine slightly shorter than the preceding one, until the 11th which is of the same length as, or slightly shorter than the 2nd, and slightly shorter than the 12th; spiny dorsal much higher than soft dorsal. Of 22 specimens, 18 have D XII.  $9\frac{1}{2}$ , two D XIII.  $9\frac{1}{2}$ , one D XIII.  $8\frac{1}{2}$ , one D XI.  $10\frac{1}{2}$ .

Anal fin with three strong spines and eight rays (all but the first divided), the last of which is double. Soft part rounded. Of the spines, the second is the strongest, more than twice the length of the first; it is not or only a little longer than the third, but much stronger.

Pectorals rounded, fairly short, about 1.6 in head, with thirteen developed rays, of which nine or ten are divided.

Ventral fins with one strong spine and five divided rays; their origin almost exactly opposite origin of D.

Caudal fin slightly emarginate, not quite symmetrical, the upper lobe slightly larger than the lower lobe, with 19 or 20 rays, of which 15 are divided.

Size. As the largest specimen obtained measured only 101 mm in standard length, and as no larger individuals were seen, the conclusion seems justified that *T. aheneus* is a small species.

Colours. In life, colour bronzy blackish-brown to dark brown, sides slightly tinged pinkish, small specimens indistinctly banded vertically. P slightly yellowish.

Type. A specimen of 90 mm standard length, collected on 18. VII. 1958 by K. C. A. Vollprecht and G. F. Mees at Millstream Pool, W.A.M. regd. no. P 5350.

Further material. Eleven specimens, varying from 51 to 101 mm standard length, same data as type, P 5351 (two specimens of this lot have been donated to the Leiden Museum); five specimens, standard length 68-95 mm, 25. VII. 1958, same locality, P 5373; three specimens, standard length 59-70 mm, 18. VII. 1958, Millstream bath house, P 5358; two specimens, standard length  $47\frac{1}{2}$  and 51 mm, 20. VII. 1958, Fortescue River at Millstream, P 5423; one specimen, standard length 50 mm, 21. VII. 1958, Fortescue River at Millstream, P 5424.

Distribution. *Therapon aheneus* was plentiful in Millstream Pool, near Millstream Station homestead, in the small creek connecting the pool with the Fortescue River, and in the Fortescue River at Millstream, which at the time of our visit consisted of a chain of large, deep, pools. We, and several other collectors who have recently visited the district and donated freshwater fishes to the Western Australian Museum, failed to find the species anywhere else, so that it is likely that it has a very limited distribution.

Related species. Working from keys and descriptions it appeared that *T. aheneus* is closest to *T. argenteus*, a species that has not yet been recorded from Western Australia and of which the Western Australian Museum had no material. Thanks to the courtesy of the Chief Inspector of Fisheries of Queensland, two large specimens were received for comparison, one of which we were allowed to retain for our collec-

tion. These specimens differ by a slightly different fin formula, D XII.  $10\frac{1}{2}$ , A III.  $8\frac{1}{2}$ , smaller scales (about 52 below lateral line), number of gillrakers,  $x + 1 + 15$ , relatively deeper body; different position of nostrils. *T. argenteus* grows also to a much larger size than any specimen of *T. aheneus* I have seen: Ogilby & McCulloch (1916) examined specimens of up to 262 mm in length, and Weber & de Beaufort (1931) mention a length of 275 mm; it is also different in colour.

The affinity to *T. argenteus* places *T. aheneus* in the group of species separated by Whitley (1943) under the generic name *Mesopristes*. While I agree with Whitley that a subdivision of the large genus *Therapon* might be useful, I prefer for the moment to keep all species under the one name. Whitley (1960) placed in the genus *Mesopristes* two other nominal species which therefore, as fairly close relatives of *T. aheneus*, require discussion.

These two species are *Therapon alligatoris* Rendahl (1922), described from the South Alligator River and the McKinley River, Northern Territory, and *Mesopristes jenkinsi* Whitley (1945) from Ivanhoe Station, Ord River, Western Australia. In the original description of *M. jenkinsi*, no reference was made to *T. alligatoris*. The type localities of these two nominal species are in the same general geographic region, and only about 250 miles apart, and comparison between the description of *T. alligatoris* and the unique type of *M. jenkinsi* (which is in the Western Australian Museum, regd. no. P 2763), shows but very few differences.

The type of *M. jenkinsi* has a standard length of 113 mm. D XIII.11, A III.8, gillrakers  $9 + 1 + 19$  (of which the last two or three rudimentary). *T. alligatoris* differs only in having D XII.12-13, gillrakers  $9 + 17$ . Whitley (1945) described the colour of *M. jenkinsi* as fairly uniform dark slate grey; this was when the specimen was still fresh (the register shows that it was received on 30 October 1944); at present it is light brown in colour, and agrees with Rendahl's colour description of *T. alligatoris*: "Colour in alcohol light brownish, paler on the ventral parts. Back with a slight tinge of purplish. Pectorals yellowish, the other fins with dark membranes, on the posterior border of the soft dorsal and anal a black basal blotch". The only differences are that the darkening of the fin membranes has only just set in; there is already a darkish blotch at the end of the dorsal fin, but the anal fin is as yet without one.

Hitherto both the species *T. alligatoris* and *M. jenkinsi* seem to have been known from their respective types only: three specimens of *T. alligatoris*, and one of *M. jenkinsi*. Besides the type of *M. jenkinsi*, the Western Australian Museum has six specimens, all collected by A. M. Douglas and G. F. Mees. Two specimens, standard length 182, 187 mm, 26.VI.1960, Kalumburu, P 5384; two specimens, standard length 151, 159 mm, June 1960, Kalumburu, P. 5385; two specimens, standard length 249, 268 mm, July 1960, Beverley Springs, P 4386. The fin formulae of these specimens, in the sequence in which they are listed above, are: D XII.12 $\frac{1}{2}$ , A III.9 $\frac{1}{2}$ ; D XIII.12 $\frac{1}{2}$ , A III.9 $\frac{1}{2}$ ; D XII.12 $\frac{1}{2}$ , A III.8 $\frac{1}{2}$ ;

D XII.11½, A III.7½; D XII.11½, A III.8½; D XI.12½, A III.8½. At the moment of writing (October, 1962), over two years after their capture, these specimens are still blackish in colour.

The large variation in fin-ray counts of the additional material, D XI-XIII.11½-12½, A III.7½-9½, shows that the slight differences in fin-formula between *T. alligatoris* and *M. jenkinsi* are well within the limits of individual variation. Therefore I have no hesitation in concluding that *Mesopristes jenkinsi* Whitley is a synonym of *Therapon alligatoris* Rendahl.

*T. aheneus* differs from *T. alligatoris* in having fewer dorsal rays, larger scales, fewer gill-rakers, and in its different colour.

I have, besides the paper by Ogilby & McCulloch (1916), used Fowler's (1931) revision, but none of the additional species listed by him seems to be close to *T. aheneus*.

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